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MEMORANDUM TO: Kenneth C. Jackson, Section Leader
Geochemistry Section, WMGT

KCJackson

PDR

LPDR (B, N, S)

FROM: Walton R. Kelly
Geochemistry Section, WMGT

SUBJECT: TRIP REPORT FOR PROJECT REVIEW OF FIN A-1756, "GEOCHEMICAL SENSITIVITY ANALYSIS," SEPTEMBER 9 - 11, 1985.

I spent three days at Sandia National Laboratories to review recent progress in the above project with the principal investigator, Dr. Malcolm D. Siegel. During the morning of the first day, we discussed the direction of the project in detail including scheduling of reports. Dr. Siegel has used a flowchart software to organize the project, of which I have a hard copy. Among the topics that we discussed were a methodology that Sandia developed for determining key radionuclides, the status of the data being compiled by subcontractors at LBL and Stanford, and how better integration with our Oak Ridge projects can be achieved. During the afternoon we spent some time discussing the method Sandia is using to develop conceptual models of the site and their methodology for calculating release ratios to compare with the EPA standard.

The second day was mainly devoted to working with MINEQL on the Sandia computing system. MINEQL is a thermodynamic code which has a theoretical sorption factor capability. The sorption capability was developed by investigators at Stanford. We went over the mathematical basis for the code and ran several sample problems to assess its capabilities. MINEQL is a powerful code which seems to be well suited for sensitivity studies. I received a tape and users manual of MINEQL, and also a tape of the latest version of PHREEQE.

I spent most of the last day meeting with other members of the Sandia staff. In Dr. Siegel's division, I talked with Tito Bonano about the research project A1266, Sandia's bedded salt methodology, the stochastic method, and colloids; with Margaret Chu about her work concerning hazardous waste at DOE LLW sites; and with Krishan Wahi about his work concerning heat flow and dissolution in salt. Dr. Siegel and I also spent several hours talking with Randy Cygan and Bill Luth of the geosciences division about the possibility of their contributing to a project concerning near field geochemical sensitivity analysis.

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I believe the trip was beneficial in that I was able to become more familiar with the Sandia methodology and personnel and have some hands-on training with MINEQL. I hope to have the code up on the MV-8000 system soon.

Walton R. Kelly
Geochemistry Section

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